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of (3) tends to the origin of the phase space $u(u_1, \ldots, u_n)$ along a certain straight line for $t \to \infty$. In § 7 sufficient conditions are given that every solution of (3) which is in a certain vicinity of the origin for $t = a$ tends to the origin for $t \to \infty$, thereby touching a straight line. Under certain assumptions concerning $\varphi(s)$ and $f(t,u)$, it is proven in § 8 that every solution $u(t)$ of (3), of which the initial value $u(a)$ belongs to a certain linear manifold S, tends to the origin for $t \to \infty$, thereby touching a certain straight line.

[Abstracter's note: Complete translation.]

Card 3/3

S/044/62/000/005/023/072
C111/C333

AUTHORS: Bykov, Ya.V., Imanaliyev, M.

TITLE: On periodic solutions of integro-differential equations

PERIODICAL: Referativnyy zhurnal, Matematika, no. 5, 1962, 78, abstract 5B351. ("Issled. po integro-differents. uravneniyam v Kirgizii". No. 1. Frunze, AN KirgSSR, 1961, 145-158)

TEXT: Given are sufficient conditions for: 1) The existence of periodic solutions with the period ω of the system of integro-differential equations

$$\begin{cases} \dfrac{dz}{dx} = Bz + k_1(x) + \lambda T_1[x, z(x), u(x)], \\ \dfrac{du}{dx} = A(x)u + k_2(x) + \lambda T_2[x, z(x), u(x)]; \end{cases} \quad (1)$$

$$\begin{cases} Bv + k_1(x) + \lambda T_1[x, v(x), w(x)] = 0, \\ \dfrac{dw}{dx} = A(x)w + k_2(x) + \lambda T_2[x, v(x), w(x)], \end{cases} \quad (2)$$

assuming that $k_i(x+\omega)=k_i(x)$, B-- a constant $n \times n$ - matrix; $A(x+\omega)=A(x)$ an $m \times m$ - matrix; $T_1(x,z,u)$ -- an operator which maps the $(n+m)$-

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On periodic solutions...

dimensional continuous vector function (z,u) with the period ω on an n-dimensional continuous vector function with period ω. 2) The convergence (for $\varepsilon \to 0$) of the periodic solution of (1) to the periodic solution of (2). 3) The stability of the solutions of the system of integro-differential equations

$$\frac{du}{dx} = A(x)u + \mu(x) + \lambda\varphi(x,u(x)) + \lambda \int_0^{h(x)} \psi(x,s,u(s))ds,$$

where the functions $\mu(x)$, $\varphi(x,u)$, $\psi(x,s,u)$, $h(x)$ have the period ω with respect to x.

The proofs of the theorems which are concerned with the above given questions are based on the

Lemma: Let the following conditions be fulfilled: 1) The equation

$$\frac{du}{dx} = A(x)u \qquad (3)$$

has no non-trivial solutions with the period ω; 2) $W(x)$ is the fundamental matrix of (3), where $W(0)=E$ is the unit matrix; 3) $D=W(\omega)$; $B=D-E$; 4) $f(x+\omega)=f(x)$. Then the periodic solution (with the period ω)

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On periodic solutions...

of the equation $\frac{dp}{dx} = A(x)p+f(x)$ is representable in the form

$$p(x) = -W(x)B^{-1}D\int_{x}^{x+\omega} W^{-1}(s)f(s)ds.$$

[Abstracter's note: Complete translation.]

Card 3/3

16,4500

S/044/62/000/007/031/100
C111/C222

AUTHORS: Bykov, Ya.V., Gur'yanov, I.N.

TITLE: On some questions of the qualitative theory of equations of Volterra type

PERIODICAL: Referativnyy zhurnal, Matematika, no. 7, 1962, 58-59, abstract 7B282. ("Izv. AN Kirg SSR. Ser. yestestv. i. tekhn. n.", 1961, 3, no. 1, 5-33)

TEXT: The authors carry out a qualitative investigation of the solutions of the non-linear system of integral equations

$$u(x) = f(x) + \psi(x,u) + \int_a^x K(x,t)u(t)dt + \int_a^b M(x,t)F[u(t)]dt , \qquad (1)$$

where u, ψ and F are n-dimensional vectors, while K(x,t) and M(x,t) are $n \times n$ - matrices.
In the §§ 1,2 the solutions of the system

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$$u(x) = f(x) + \int_a^x K(x,t)u(t)dt \qquad (2)$$

are constructed according to the operator method of Mikusinski, if 1) $K(x,t) = \sum Q_i(x-t)\exp[-\beta_i(x-t)]$ is a quasipolynomial matrix (§ 1) and 2) $K(x,t) = K[\psi(x) - \psi(t)]\psi'(t)$ (§ 2); there the characteristic polynomial $\varphi(s)$ can possess simple and multiple roots. Some criteria for the stability of the solutions of (2) and the equation

$$u(x) = f(x) + \int_a^x K(x-t)u(t)dt + \int_a^b M(x,t)F[u(t)]dt \qquad (3)$$

are considered in § 3. The kernel $K(x,t)$ of (2) is called stable on $[a,\infty)$ (or on $(-\infty, a]$), if to every $\varepsilon > 0$ there is a $\delta > 0$ such that from $\|f(x)\| \leq \delta$ it follows $\|u(x)\| < \varepsilon$ for all $x \in [a, \infty)$ (or $x \in (-\infty, a]$). If in (3) $F[\cdot]$ is a linear operator, $K(x,t)$ a quasipolynomial stable kernel and if $M(x,t)$ and $F_x[M(x,t)]$ are bounded for all $a \leq x < \infty$, $a \leq t \leq b$, then $\|u(x)\| < \varepsilon$ as soon as $|f^{(i)}(x)| \leq \delta$ ($a \leq x$; $i = 0,1,\ldots,n$). In § 4 the authors investigate

conditions for the existence of limit cycles and almost-limit cycles of the system

$$u(x) = f(x) + \psi(x,u) + \int_a^x K(x,t)u(t)dt \ . \qquad (4)$$

A periodic (according tc Bohr almost periodic) curve $v(x) = (v_1(x),\ldots, v_n(x))$ is called limit cycle of (4), if

$$\| u(x) - v(x) \| = \sum_{k=1}^{n} | u_k(x) - v_k(x) | \to 0 \ ,$$

$$x \to \infty \ (x \to -\infty).$$

From the results of this paragraph the following may be mentioned. If all real parts α_i of the roots of the polynomial $\varphi(s)$ are negative,

$$\| \psi(x,u) \| \leq \mu(x) + \gamma(x) \| u \| \ ; \ \gamma(x) < 1 \ ;$$

$$\mu(x) \to 0, \ \int_a^x \gamma(t)dt$$

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converges for $x \to \infty$, and if $f(x)$ is a periodic (almost periodic) function, then (4) possesses a limit cycle (almost-limit cycle). If in (3)

$$K(x+\omega,t) = K(x,t) \; ; \; f(x+\omega) = f(x) \; ;$$

$$\|M(x,t)\| < N \; , \; \|F[u(t)]\| < P$$

for all $a \leq t \leq b$, and if all $\alpha_i < 0$, then (3) possesses a limit cycle (almost-limit cycle). In § 5 necessary and sufficient conditions are given that (2) possesses periodic, almost periodic and periodic solutions with change of sign after a semiperiod. In § 6 the authors construct solutions of the system

$$\int_0^x K(x-t)u(t)dt = f(x)$$

according to the operator method of Mikusinski; conditions for the stability and existence of limit cycles are given.

[Abstracter's note : Complete translation.]

Card 4/4

BYKOV, Ya.V.; IMANALIYEV, M.

Periodic solutions to integrodifferential equations. Issl. po int.-diff. urav. v Kir. no.1:145-158 '61. (MIRA 15:2)
(Integrodifferential equations)

KRIVOSHEIN, Leonid Yevgen'yevich; BYKOV, Ya.V., otv. red.; ANOKHINA, M.G., tekhn. red.

[Approximate methods for solving ordinary linear integrodifferential equations]Priblizhennye metody resheniia obyknovennykh lineinykh integro-differentsial'nykh uravnenii. Frunze, Akad. nauk Kirgizskoi SSR, 1962. 183 p. (MIRA 15:9)
(Integrodifferential equations)

BYKOV, Ya. V

One method of Solving Equations Consisting of Linear Permutable Operators. p.42

TRANSACTIONS OF THE 2ND REPUBLICAN CONFERENCE ON MATHEMATICS AND MECHANICS (TRUDY VTOROY RESPUBLIKANSKOY KONFERENTSII PO MATEMATIKE I MEKHANIKE), 184 pages, published by the Publishing House of the AS KAZAKH SSR, ALMA-ATA, USSR, 1962

ACCESSION NR: AT3013099 S/2757/62/000/002/0041/0056

AUTHOR: By*kov, Ya. V.

TITLE: Stability of the solution of one class of integro-differential equations

SOURCE: AN KirgSSR. Institut fiziki, matematiki i mekhaniki. Issledovaniya po integro-differentsial'ny*m uravneniyam v Kirgizii, no. 2, 1962, 41-56

TOPIC TAGS: integrodifferential equation, integrodifferential equation solution, stability, Barbashin equation, Cauchy problem

ABSTRACT: The integro-differential equation

$$\frac{\partial u(t,x)}{\partial t} = A(t)\,u(t,x) + \int_a^t K(t,\tau)\,u(\tau,x)\,d\tau + F(t,x,u) \qquad (3)$$

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a particular form is the Barbashin equation

$$\frac{\partial u(t,x)}{\partial t} = \varphi(t,x,u(t,x)) + \int_a^t K(t,\tau)u(t,x)d\tau + \int_b^t \psi(t,x,s,u(t,s))\,ds \qquad (E)$$

with $K(t,\tau)\equiv 0$

is investigated and theorems are derived with respect to the properties of its solutions under various initial conditions. It is claimed that the stability of this general equation has not been investigated before by any mathematician. The trivial solution of the equation is considered in relation to the solutions of the Cauchy problem and an example is presented of a linear equation, all the solutions of which tend to zero exponentially with increasing time and whose trivial solution is unstable. Some difficulties involved with the stability of the solutions are also pointed out. Orig. art. has: 12 formulas.

ASSOCIATION: Institut fiziki matematiki i mekhaniki AN KirgSSR

Card 2/3

ACCESSION NR: AT3013099

(Institute of Physics, Mathematics, and Mechanics, AN KirgSSR)

SUBMITTED: 00 DATE ACQ: 30Sep63 ENCL: 00

SUB CODE: MM NO REF SOV: 007 OTHER: 010

Card 3/3

ACCESSION NR: AT3013100 S/2757/62/000/002/0079/0089

AUTHOR: By*kov, Ya. V.

TITLE: Bounded solutions of one class of integrodifferential equations

SOURCE: AN KirgSSR. Institut fiziki, matematiki i mekhaniki. Issledovaniya po integro-differentsial'ny*m uravneniyam v Kirgizii, no 2, 1962, 79-89

TOPIC TAGS: integrodifferential equation, bounded solution, existence theorem small parameter

ABSTRACT: The equation

$$\frac{\partial u(t,x)}{\partial t} = Au + \mu(t,x) + \lambda T(t,x,u(t,x)), \qquad (1.1)$$

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(where A is a constant n x n matrix, u and $\mu(t, x)$ are n-dimensional vectors, T(t, x, u) is an operator which maps the n-dimensional vector 0-function u(t, x) into an n-dimensional 0-function), particular solutions of which are the integro-differential equations of the Barbashin type

$$-\frac{du(t)}{dt}=Au(t)+\eta(t)+\lambda[\varphi_1(t,u_1(t),\ldots,u_n(t))+$$

$$+\int_0^t e^{-t+\tau}\varphi_2(t,\tau,u_1(\tau),\ldots,u_n(\tau))\,d\tau+$$

is found to have bounded solutions with respect to which several theorems are proved. The behavior of bounded solutions of integro-differential equations with small parameter at the derivative

$$\varepsilon\frac{\partial z(t,x)}{\partial t}=Bz(t,x)+\mu_1(t,x)+\lambda T_1(t,x,u,z);$$

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307920003-7"

ACCESSION NR: AT3013100

$$\frac{\partial u(t,x)}{\partial t}=Au(t,x)+\mu_2(t,x)+\lambda T_2(t,x,u,z), \qquad (2.1)$$

is also investigated. It is pointed out that if (2.1) is to be used to solve practical problems it is very important to establish the conditions under which its solution of the system (2.1) converges to a solution of the system

$$0=Bz\ (t,x)+\mu_1\ (t,x)+\lambda T_1(t,x,u,z),$$
$$\frac{\partial u(t,x)}{\partial t}=Au(t,x)+\mu_2(t,x)+\lambda T_2(t,x,u,z), \qquad (2.2)$$

which is degenerate with respect to (2.1), both solutions having the same properties. Orig. art. has: 26 formulas.

ASSOCIATION: Institut fiziki, matematiki i mekhaniki AN KirgSSR (Institute of Physics, Mathematics, Mechanics, AN KirgSSR)

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ACCESSION NR: AT3013097 S/2757/62/000/002/0003/0020

AUTHORS: By*kov, Ya. V.; Imanaliyev, M.

TITLE: Periodic, nearly periodic, and bounded solutions of one class of integro-differential equations with small parameter preceding the derivative

SOURCE: AN KirgSSR. Institut fiziki, matematiki i mekhaniki. Issledovaniya po integro-differentsial'ny*m uravneniyam v Kirgizii, no. 2, 1962, 3-20

TOPIC TAGS: integro differential equations, nonlinear integrodifferential equations, periodic solution, nearly periodic solution, bounded solution, small parameter, integral operator, existence theorem

ABSTRACT: The behavior is investigated of periodic, nearly-periodic, and bounded solutions of one class of integro-differential equations

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ACCESSION NR: AT3013097

with the highest-order derivative preceded by a small parameter. The symbolic form of this equation is

$$\mu\frac{dz}{dt}=F(z,y,t);\qquad \frac{dy}{dt}=f(z,y,t), \tag{3}$$

where z, y, F, and f are vectors, F and t are integral operators, and μ is the small parameter. Examples are given of integral operators which transform nearly-periodic, periodic, and bounded vector functions into almost periodic, periodic, and bounded vector functions, respectively. Existence theorems are derived for the periodic, almost periodic, and bounded solutions of nonlinear systems of integro-differential equations. Several theorems are derived regarding the behavior of the solutions of systems of integro-differential equations with small parameter at the derivative. Orig. art. has: 30 formulas.

ASSOCIATION: Institut fiziki, matematiki i mekhaniki AN KirgSSR

(Institute of Physics, Mathematics, and Mechanics, AN Kirg SSR)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307920003-7"

ACCESSION NR: AR4039292 S/0044/64/000/003/B078/B078

SOURCE: Ref. zh. Matematika, Abs. 3B370

AUTHOR: By*kov, Ya. V.

TITLE: Contributions to the analytical theory of Barbashin-type integro-differential equations

CITED SOURCE: Sb. Materialy* 7-y Nauchn. konferentsii Kafedry* vy*ssh. matem. Frunzensk. politekhn. in-t. Frunze, 1963, 7-9

TOPIC TAGS: Barbashin integro-differential equation, operator equation, holomorphic operator function

TRANSLATION: For the operator equation

$$(z-a)\frac{\partial u(z,x)}{\partial z} = H(z,x)\left[\overline{u}(z,x)\right]_{\overline{l}}$$

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where $H(z,x)$ is a holomorphic operator function in the region $|z-a| \leqslant R$ and

$$H(z,x)\overline{\lfloor f(z)\varphi(z,x)\rfloor} = f(z)H(z,x)\overline{\lfloor \varphi(z,x)\rfloor},$$

the author announces a theorem which permits us to establish the existence of (n+1) linearly independent solutions. The proof of this theorem and a series of other results were given by the author in (RZh. Mat, 1963, 9B308). L. Krivosheim.

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Card 2/2

ACCESSION NR: AR4039293 S/0044/64/000/003/B078/B078

SOURCE: Ref. zh. Matematika, Abs. 3B371

AUTHOR: By*kov, Ya. V.

TITLE: Certain problems in the qualitative theory of difference equations

CITED SOURCE: Sb. Materialy* 7-y Nauchn. konferentsii Kafedry* vy*ssh. matem. Frunzensk. politekhn. in-t. Frunze, 1963, 10-11

TOPIC TAGS: difference equation qualitative theory, integro-difference equation, Cauchy problem solution, trivial solution stability, periodic solution, almost-periodic solution

TRANSLATION: For the system of integro-difference equations

$$u(l+1, x) = u(l, x) + B_0(l, x)\,u(l, x) +$$

$$+ \sum_{k=0}^{n} D_k(l, k, x)\,u(k, x) + \sum_{k=0}^{l} \int_b A_k(l, k, s)\,u(k, s)\,ds +$$

$$+ \sum_{k=0}^{m} \int_b C_k(l, k, s)\,u(k, s)\,ds$$

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ACCESSION NR: AR4039293

the author announces certain results concerning the existence of a solution to the Cauchy problem and the stability of the trivial solution, and he announces the existence of a periodic and almost-periodic solution. V. Krivoshein.

DATE ACQ: 22Apr64 SUB CODE: MA ENCL: 00

Card 2/2

BYKOV, Ya.V.

Special periodic solutions to systems of ordinary differential equations. Dif. urav. 1 no.7:851-867 Jl '65. (MIRA 18:8)

1. Institut fiziki i matematiki AN Kirgizskoy SSR.

L 11916-66 EWT(d) IJP(c)

ACC NR: AP5028763 SOURCE CODE: UR/0376/65/001/011/1449/1476

AUTHOR: Bykov, Ya. V.

ORG: Institute for Physics and Mathematics, AN Kirgiz SSR (Institut fiziki i matematiki, AN Kirgizskoy SSR)

TITLE: Class of systems of ordinary differential equations

SOURCE: Differentsial'nyye uravneniya, v. 1, no. 11, 1965, 1449-1476

TOPIC TAGS: differential equation, boundary value problem, first order differential equation, differential solution

ABSTRACT: The author studies certain classes of systems of differential equations to which he can extend the qualitative theory concerning oscillating and nonoscillating solutions which holds for a single equation. After building up preliminary theory, he obtains sufficient conditions for existence of oscillatory and weakly oscillatory solutions of systems of first order differential equations. The properties of a class of boundary problems and sufficient conditions for existence of oscillatory and nonoscillatory solutions for linear systems of first order differential equations are studied, and sufficient conditions for solution of nonlinear systems having infinite sets of zeros are treated. Orig. art. has: 43 formulas.

SUB CODE: 12/ SUBM DATE: 05Apr65/ SOV REF: 010/ OTH REF: 003

Card 1/1 HW

L 30238-66 EWT(d) IJP(c)
ACC NR: AP6020154 SOURCE CODE: UR/0376/65/001/007/0851/0867

AUTHOR: Bykov, Ya. V.

ORG: Institute of Physics and Mathematics, AN KirgSSR (Institut fiziki i matematiki AN KirgSSR)

TITLE: Particular periodic solutions of systems of ordinary differential equations

SOURCE: Differentsial'nyye uravneniya, v. 1, no. 7, 1965, 851-867

TOPIC TAGS: ordinary differential equation, periodic solution

ABSTRACT: In this article the existence of particular periodic solutions to systems of ordinary differential equations is investigated. In particular, the periodic solution $v(t,\mu)$, expressed in the form of a series

$$v(t,\mu)=\sum_{k=-p}^{\infty} v_k(t)\mu^{k/q}$$

is considered, where p and q are positive integers. The solution is considered to be a particular one if at least one of the coefficients $v_{-p}(t),\ldots, v_{-1}(t)$ differs from zero. As applied to a system of n differential equations with n unknowns, the functions

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ACC NR: AP6020154

$v(t,\mu)$, $v_k(t)$ are n-dimensional vectors. Various scalar equations expressed as series and then as differential equations are studied, together with the Duffing (sic) equation - especially with respect to small values of the parameter μ. Orig. art. has: 27 formulas. [JPRS]

SUB CODE: 12 / SUBM DATE: 26Feb65 / ORIG REF: 005 / OTH REF: 001

Card 2/2 cc

ACC NR: AP7013137 SOURCE CODE: UR/0140/67/000/001/0021/0029

AUTHOR: Bykov, Ya. V. (Frunze); Linenko, V. O. (Frunze)

ORG: none

TITLE: Qualitative study of trajectories of nonlinear systems of difference equations

SOURCE: IVUZ. Matematika, no. 1, 1967, 21-29

TOPIC TAGS: difference equation, nonlinear differential equation, operational calculus

SUB CODE: 12

ABSTRACT: A qualitative study is made of the behavior of solutions (for $n \to \infty$) to the system of difference equations

$$L_n(u) \equiv u(n+1) - Au(n) - \sum_{m=0}^{n-1} K(n-m-1)u(m) = f(n, u(n)), \quad (1)$$

where $K(n) \equiv \sum_{i=1}^{l} Q_i(n)\lambda_i^n$, $Q_i(n) \equiv \sum_{s=0}^{m_i} R_{is}n^{(s)}$; A, R_{is} are k-square

Card 1/3 UDC: 517.917

constant matrices; λ; are constants; $n^{(s)} = n(n-1)\ldots(n-s+1)$ is a generalized power s of the number n; n = 0, 1, 2, ...; u, f are k-dimensional vector functions.

To aid them in this, the authors make use of operator calculus based on the transformation $f(q) = \sum_{n=0}^{\infty} \frac{1}{q^{n+1}} f(n)$, where q is a complex number

The point Q of phase space $u(u_1 \ldots u_x)$ is defined as a strong node of the system of difference equations

$$u(n+1) = B(n)\,u(n) + \sum_{m=0}^{n-1} K(n-m-1)\,u(m) + f(n, u(n))$$

if, for $n \to \infty$, any fixed solution u(n) of this equation coincides with point Q in a given direction. Two theorems are given which show that under certain

ACC NR: AP7013137

conditions the coordinate origin is a strong node of system (1). Conditions are determined for the stability of solutions to system (1), and a theorem is presented which gives a sufficient condition for the existence of a node of the system. Orig. art. has: 24 formulas. [JPRS: 40,207]

Card 3/3

BYKOV, V.

Concerning A.A.Rizkin's article "Design of transistor video amplifiers." Elektrosviaz' 17 no.9:73-74 S '63. (MIRA 16:10)

BYKOV, Ye.

Mechanizing work on interplant planning with the aid of an electronic calculating machine. Biul.nauch.inform.: trud i zar.plata 5 no.8:46-52 '62. (MIRA 15:7)
(Machinery industry) (Electronic calculating machines)

EYKOV, Ye.; GAVRILETS, Yu.

Solving several problems of intraplant planning. Vop.ekon. no.1:84-93 Ja '63. (MIRA 16:2)
(Machinery industry--Management) (Programming (Electronic computers))

BYKOV, E. I., Eng.

USSR/Electricity - Power Systems
Subways

Jul 50

"Development of the Moscow Subway Power System," V. A. Tumanov, V. G. Gurvich, E. I. Bykov, Engineers, Moscow Subway imeni Kaganovich

"Elektrichestvo" No 7, pp 23-29

Describes development and improvement of Moscow subway power system over 15 years. Gives operational data on substation equipment, electric networks, automatic devices, telecontrol, and protection. Details work done by number of Moscow plants, research institutes and organizations.

PA 164T13

Bykov, Ye. I.

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(Continued on next card)

MENESHEVICH, I.I.----(continued) Card 2.

VASIL'YEV, V.F.; GONCHAROV, N.G., inzhener; DERIBAS, A.T., inzhener; DOBROSEL'SKIY, K.M., dotsent, kandidat tekhnicheskikh nauk; DLUGACH, B.A., kandidat tekhnicheskikh nauk; YEFIMOV, G.P., kandidat tekhnicheskikh nauk; ZEMBLINOV, S.V., professor, doktor tekhnicheskikh nauk; ZABELLO, K.L., kandidat tekhnicheskikh nauk; IL'IN, K.P., kandidat tekhnicheskikh nauk; KARETNIKOV, A.D., kandidat tekhnicheskikh nauk; KAPLUN, F.Sh., inzhener; KANSHIN, M.D.; KOCHNEV, F.P., profesaor, doktor tekhnicheskikh nauk; KOGAN, L.A., kandidat tekhnicheskikh nauk; KUCHURIN, S.F., inzhener; LEVASHOV, A.D., inzhener; MAKSIMOVICH, B.M., dotsent, kandidat tekhnicheskikh nauk; MARTYNOV, M.S., inzhener; MEDEL', O.M., inzhener; NIKITIN, V.D., professor, kandidat tekhnicheskikh nauk; PADNYA, V.A., inzhener; PANTELEYEV, P.I., kandidat tekhnicheskikh nauk; PETROV, A.P., professor, doktor tekhnicheskikh nauk; POVOROZHENKO, V.V., professor, doktor tekhnicheskikh nauk; PISKAREV, I.I., dotsent, kandidat tekhnicheskikh nauk; SEROKHVEV, Ye.S., kandidat tekhnicheskikh nauk; SIMONOV, K.S., kandidat tekhnicheskikh nauk; SIMANOVSKIY, M.A., inzhener; SUYAZOV, I.G., inzhener; TAIDAYEV, F.Ya., inzhener; TIKHONOV, K.K., kandidat tekhnicheskikh nauk; USHAKOV, M.Ya., inzhenr; USPENSKIY, V.K., inzhener; FEL'DMAN, E.D., kandidat tekhnicheskikh nauk; FERAPONTOV, G.V., inzhener; KHOKHLOV, L.P., inzhenr; CHERNOMORDIK, G.I., professor, doktor tekhnicheskikh nauk; SHAMAYEV, M.F., inzhener; SHAFIRKIN, B.I., inzhener; YAKUSHIN, S.I., inzhener; GRANOVSKIY, P.G., redaktor; TISHCHENKO, A.I., redaktor; ISAYEV, I.P., dotsent, kandidat tekhnicheskikh nauk, redaktor; KLIMOV, V.F., dotsent kandidat tekhnicheskikh

(Continued on next card)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307920003-7"

BENESHEVICH, I.I.-- (continued) Card 3.
nauk, redaktor; MARKOV, M.V., inzhener, redaktor; KALININ, V.K., inzhener, redaktor; STEPANOV, V.N., professor, redaktor; SIDOROV, N.I., inzhener, redaktor; GERONIMUS, B.Ye., kandidat tekhnicheskikh nauk, redaktor; ROBEL', R.I., otvetstvennyy redaktor

[Technical reference manual for railroad engineers] Tekhnicheskii spravochnik zheleznodorozhnika. Moskva, Gos. transp.zhel-dor. izd-vo. Vol.10. [Electric power supply for railroads] Energosnabzhenie zheleznykh dorog. Otv.red. toma K.G.Markvardt. 1956. 1080 p. Vol.13. [Operation of railroads] Ekspluatatsiia zheleznykh dorog. Otv. red. toma R.I.Robel'. 1956. 739 p. (MLRA 10:2)

1. Chlen-korrespondent Akademii nauk SSSR (for Petrov)
(Electric railroads) (Railroads--Management)

L 11551-66 EWT(l)/EWT(m)/EEC(k)-2/T/EWP(t)/EWP(b)/EWA(h) IJP(c) JD

ACC NR: AP6005026 SOURCE CODE: UR/0105/65/000/001/0042/0048

AUTHOR: Aleksashkin, A. A.; Bykov, Ye. I.; Zemlyanaya, Ye. A.; Krotov, L. B.; Kurtsina, Z. T.; Poselenov, L. B.; Sakovich, A. A.; Yuditskiy, S. B.

ORG: none

TITLE: New semiconductor rectifiers for the rectifier substations of subways

SOURCE: Elektrichestvo, no. 1, 1965, 42-48

TOPIC TAGS: semiconductor rectifier, electric engineering, electric substation equipment

ABSTRACT: Computations are presented to prove the feasibility and economy of replacing the six IVS-500/2 type sealed mercury-arc rectifiers with stacks of VK-200/4A type silicon rectifier cells (average current 200 amp; operating peak inverse voltage [PIV] 400 v; rated PIV 600 v) in the rectifier substations that supply 825 volts d-c for subway traction. The computed six-phase rectifier unit has six parallel branches per phase, with six series-connected cells per branch. The number of parallel branches is computed on the basis of peak load and surge current, taking the circuit-breaker interrupting time into consideration. The number of series-connected cells is computed on the basis of the PIV's, with allowances for variations in the supply voltage. The overall efficiency of the rectifier unit is 98.9 percent. It is assembled from modular stacks (12 cells and one fan per module) and fits into two cabinets 800 by 800 by 2000 mm. Although at present silicon rectifiers are more expensive than mercury-arc

Card 1/2 UDC: 621.314.632.4:621.311.44:625.42

L 11551-66

ACC NR: AP6005026

rectifiers (due to the high cost of single-crystal silicon and the low level of automation), conversion of subway substations to such rectifiers pays for itself in five to six years, and the economy of building new rectifier substations of this type is even greater. Orig. art. has: 4 figures, 23 formulas, and 1 table. [JPRS]

SUB CODE: 09 / SUBM DATE: 08Jun64 / ORIG REF: 002

HW

Card 2/2

SKURATOV, Ye.G., inzh.; BYKOV, Ye.S.

Photoimpact turn-angle transmitter for rolling mills. Mekh.i avtom.proizv. 17 no.7:22-23 Jl '63. (MIRA 16:8)
(Rolling mills) (Photoelectric measurements)

SOVKIN, V.F., kand.tekhn.nauk; BYKOV, Ye V.; NIKOLAYEV, A.I.

Safety hood for grinding machines. Mashinostroitel' no.1:29 Ja '62. (MIRA 15:1)
(Grinding machines—Safety appliances)

SOVKIN, Vasiliy Fedorovich; NIKOLAYEV, Aleksandr Ivanovich[deceased]; SHATUNOV, Mikhail Petrovich; BYKOV, Yevgeniy Viktorovich; SEVAST'YANOV, Vladimir Yakovlevich; MIKHAYEV, N.I., red.

[Increasing the productivity and improving the quality of surfaces subjected to grinding] Povyshenie proizvoditel'-nosti i uluchshenie kachestva poverkhnosti pri shlifovanii. Kuibyshev, Kuibyshevskoe knizhnoe izd-vo, 1963. 109 p. (MIRA 17:7)

L 40812-65 EWT(m)/EWP(e)/EPF(n)-2/EWP(t)/EWP(k)/EWP(z)/EWP(b) Pf-4/Pu-4
IJP(c) JD/JG

ACCESSION NR: AP5008233 S/0286/65/000/005/0125/0125

AUTHORS: Pol'kin, S. I.; Bykov, Yu. A.; Boriskina, Ye. A. 39 B

TITLE: Method for removing carbon from electrolytic powders of tantalum niobium and their alloys. Class 1, No. 153049

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, 1965, 125

TOPIC TAGS: tantalum, tantalum alloy, niobium, niobium alloy

ABSTRACT: This Author Certificate presents a method for removing carbon from electrolytic powders of tantalum, niobium, and their alloys. To maximize purification of the powders from carbon, the original powders are subjected to flotation with kerosene and OPSB (product of the interaction of propylene oxide and butyl alcohol) as reagents. For increased content of bound carbon in the form of tantalum and niobium carbides, reagents are added to the pulp, creating an alkaline medium (e.g., potassium hydroxide, sodium carbonate, water glass, etc). In an alternate method for flotation of powders with increased content of carbon, oleic acid is added to the pulp.

ASSOCIATION: none
SUBMITTED: 23Dec61 ENCL: 00 SUB CODE: MM
NO REF SOV: 000 OTHER: 000
Card 1/1 fc

BYKOV, Yu.A., Cand Tech Sci--(diss) "On the problem of extraction of pyrochlore from (ores of the) Vishnevogorsk[illegible] deposit by the flotation method." Mos, 1958. 18 pp (Min of Higher Education USSR. Mos Inst of Non-Ferrous Metals and Gold im M.I.Kalinin. Chair of "Concentration of Ores of Rare and Radioactive Metals"), 150 copies (KL,45-58, 146)

TETERIN, G.N.; BYKOV, Yu.A.

Accuracy of geodesic leveling. Geod. i kart. no.12:12-18 D '63.
(MIRA 17:1)

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 11, p 5 (USSR) SOV/137-58-11-21878

AUTHORS: Pol'kin, S. I., Bykov, Yu. A., Shapavalov, G. M.

TITLE: On the Flotation of Pyrochlore and Zircon (K voprosu flotatsii pirokhlora i tsirkona)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy, Tsvetnaya metallurgiya, 1958, Nr 1, pp 48-59

ABSTRACT: A study is made of the flotation properties of pyrochlore, zircon, and other minerals entering into the make-up of the concentration-resistant pyrochlore-zirconium ores. Various collectors, different pH values of the medium, and prior caustic and acid treatment were employed. The pH limits at which the best floatability of various minerals is attained with various collectors are established. This substantiates the fact that it is theoretically possible to separate them selectively. Pre-treatment with caustic or acid facilitates selective flotation. Radioactive isotopes are used to reveal the influence of the presence of various soluble salts upon flotation. This is of particular significance in the flotation of gravitation tailings. Methods of regulating the composition of the medium are

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On the Flotation of Pyrochlore and Zircon

presented. Flowsheets and reactant regimens for selective flotation of concentration-resistant, finely disseminated, pyrochlore-zircon ores and gravitation slimes, capable of yielding quality products, are presented. Thus, in the flotation of an ore containing 0.08% Nb_2O_5 and 0.37% ZrO_2, concentrates were obtained with 7.2% Nb_2O_5 and 20% ZrO_2, recovery being 73 and 90%, respectively. This procedure makes it possible to separate the following concentrates as well: Pure feldspar (satisfactory for the ceramics industry), feldspar-aegirite-augite, sulfide, calcite, and apatite.

B. L.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307920003-7"

PLATONOV, A.L.; POL'KIN, S.I.; BYKOV, Yu.A.

Froth collapse in flotation plants. Izv. vys. ucheb. zav.; tsvet. met. 4 no.4:30-32 '61. (MIRA 14:8)

1. Vishnevogorskoye rudoupravleniye, Krasnoyarskiy institut tsvetnykh metallov. Rekomendovana kafedroy obogashcheniya poleznykh iskopayemykh Krasnoyarskogo instituta tsvetnykh metallov.

(Flotation)

POL'KIN, Stepan Ivanovich; GLADKIKH, Yuriy Fedorovich; BYKOV, Yuriy Aleksandrovich; BARSKIY, L.A., otv. red.; MAKRUSHINA, Ye.A., red.izd-va; MAKSIMOVA, V.V., tekhn. red.

[Dressing of tantalum and niobium ores] Obogashchenie rud tantala i niobiia. Moskva, Gosgortekhizdat, 1963. 186 p. (MIRA 16:5)

(Ore dressing) (Tantalum) (Niobium)

BYKOV, Yu.G., inzh.; GINGOL'D, M.I., inzh.

Regeneration braking on electric a.c. locomotives. Zhel. dor. transp. 47 no.3:61-62 Mr '65. (MIRA 18:5)

UDILOV, V.I., inzhener; BYKOV, Yu.I., inzhener.

Rafting on the Volga River. Mekh.trud.rab. 7 no.10:33-34 O-N '53.
(MLRA 6:10)
(Volga River--Lumbering) (Lumbering--Volga River)

BYKOV, Yu.M.

Determining the root-mean-square error of interpolation in the discrete measurement of random signals. Trudy MIKHM 25:138-150 '63.

System for the processing of the charts of subsonic frequency processes by the method of reverse tracking transformation. Ibid.:268-278 (MIRA 17:6)

6.3300 (1114)

22253
S/103/61/022/010/018
D274/D301

AUTHOR: Bykov, Yu. M. (Moscow)

TITLE: White-noise generator for studying infra-low frequency processes

PERIODICAL: Avtomatika i telemekhanika, v. 22, no. 10, 1961, 1307-1312

TEXT: A low-frequency ($1 \cdot 10^{-3}$–1 cycle) white-noise generator is described, incorporating a charged-particle counter. Its design is simple, and the generated white noise has the necessary level and uniform power density spectrum over the required frequency range. The generator is free of the disadvantages of earlier generators, such as distortions due to amplification, non-stationarity, complex design, and dependence of noise characteristics on peculiarities of design. In practice, the simplified expression for the power density spectrum, in the low frequency range, viz.

$$G(\omega) \approx \frac{4u^2}{\pi \lambda} \qquad (3)$$

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White-noise generator...

can be used. An accurate estimate of the required value of λ in the frequency range with given upper frequency ω_u and degree of non-uniformity n of density spectrum is given by formula

$$\lambda = \omega_u \sqrt{\frac{1}{n} - 1} \approx \omega_u \frac{1}{\sqrt{n}} \qquad (1)$$

This formula permits determining ω_u for given n and experimentally found λ ; (λ is measured at pulse-generator 5). Fig. 4 represents a block-diagram of the generator: as counter 1, a series-produced multivibrator counter can be used (of type STS-5, for example). Multivibrator 2 transforms the pulses arriving from the counter into random signals which thereupon, pass through low-frequency filter 3; blocking state 4 eliminates the load effects; 6 is an integrator and 7 a d.c.-amplifying device. The diagram contains two double-triodes (of micro-miniature type). The level of the noise signal (the mean-square deviation) can be adjusted

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White-noise generator...

between 0 to 6 volts. During the experiments, special attention was given to the distribution-law of the noise amplitudes. In order to ascertain the amplitude distribution, the statistical distribution-function was plotted. It is concluded that:(1) The generated white noise has (in the infralow frequency range) a uniform density spectrum $G(\omega)$ given by Eq. (3); (2) The noise-amplitude distribution can be approximated, in practice, by the normal distribution law; (3) The stationary character of the noise is a result of the properties of radio-active decay. This characteristic of the original noise-signal is preserved throughout the generator (due to the noise level and the absence of amplifying elements). (4) The considerable noise-level excludes the influence of ordinary parasitic noises too. (5) The uniformity of the power density spectrum in the band with upper frequency ω_u is readily adjusted by varying λ. (6) The generator provides for adjustment of λ and of the mathematical expectation and standard deviation. (7) Its simplicity ensures reliable operation without adjustments during its working. There are 6 figures and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc. The references to

Card 3/4

White-noise generator...

the English-language publications read as follows: R. R. Bennett, A. S. Fulton, The Generation and Measurement of Low Frequency Random Noise, Journ. Appl. Phys., v. 22, no. 9, September, 1951; H. Becher, R. R. Bennett, H. Low, Stabilized Noise Source for Air-Weapons Design, Electronics, v. 27, no. 7, 1954.

SUBMITTED: May 30, 1961

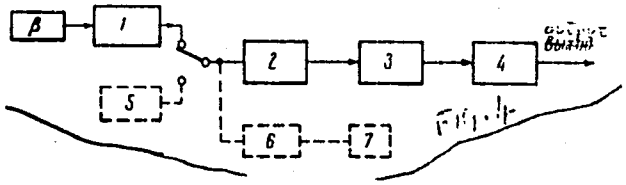

Рис. 4

Fig. 4

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6.7500

S/119/62/000/007/004/006
I045/I245

AUTHOR: Bykov, Yu. M.

TITLE: Photoelectric detection system for conversion of graphs into electric signals

PERIODICAL: Priborostroyeniye no. 7, 1962, 23-24

TEXT: The device described is automatic, inexpensive and simple in construction and maintenance. It transforms data recorded on a paper chart into electric signals for further processing by a photocell, an amplifying system, a micromotor and a converter. The record chart moves past the photocell and is illuminated from behind by a light spot. The photohead moves perpendicularly to the chart and follows the recorded curve. The converter transforms the translation of the photocell into continuous or separate electric signals. There are 4 figures.

Card 1/1

BYKOV, Yu. M. (Moskva)

Determination of the r.m.s. error of interpolation in conjunction with the discrete measurement of random signals. Izv. AN SSSR. Otd. tekh. nauk. Energ. i avtom. no.6:113-119 N-D '62. (MIRA 16:1)

(Automatic control)

BYKOV, Yu.M.

Reply to a letter by V.F.Nesteruk, N.N.Porfir'eva, and B.A.Finagin. Avtom.i telem. 24 no.1:117-118 Ja '63. (MIRA 16:1)
(Oscillators, Electric) (Automatic control)
(Nesteruk, V.F.) (Porfir'eva, N.N.) (Finagin, B.A.)

ACCESSION NR: AT4021140 S/3078/63/025/000/0138/0150

AUTHOR: By*kov, Yu. M.

TITLE: Determination of the mean-square interpolation error in the discrete measurement of random signals

SOURCE: Msocow. Institut khimicheskogo mashinostroyeniya. Trudy*, v. 25, 1963. Kompleksnaya avtomatizatsiya khimicheskikh proizvodstv (Over-all automation in the chemical industry), 138-150

TOPIC TAGS: automation, feedback, random signal, random signal discrete measurement, interpolation error

ABSTRACT: The author begins by noting that, at the present time, there is a wide use of automatic systems containing elements of discrete action which are characterized by the transmission and conversion of information in the form of discrete readings of continuous functions of time. Such a discrete representation of continuous functions normally entails a subsequent interpolation of the periodic readings, performed by the device receiving the information. The interpolation process consists in the restoration of a certain continuous function y(t) from a sequence of periodic discrete readings of the continuous function x(t). The representation of the function of the interpolation curve y(t)

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ACCESSION NR: AT4021140

involves the introduction of a certain error which may be regarded, according to the author, as the imposition of noise interference on the initial function. In this connection, an important practical problem arises, namely, that of determining the accuracy of the interpolation, characterizing the degree of proximity of resultant curve y(t) and initial curve x(t). In solving problems connected with the discrete measurement of continuous random functions, an important question is the determination of the relationship between the erroneousness of the measurement results and the frequency of the readings of the initial continuous process. The role of spectral density is considered in this connection. The interpolation error is shown to be the difference of two random processes:

$$\varepsilon(t) = x(t) - y(t). \qquad (1)$$

Thus, $\varepsilon(t)$ is a random process and, for this reason, cannot be estimated on the basis of its instantaneous values. In this paper, the author derives an equation:

$$\overline{\varepsilon^2} = \frac{1}{2\pi}\int_{-\infty}^{\infty} |1 - A(j\omega)|^2 S_x(\omega)\, d\omega + \frac{1}{2\pi}\int_{-\infty}^{\infty} |A(j\omega)|^2 \times \qquad (2)$$

$$\times \sum_{k=1}^{\infty} \left[S_x\left(\omega - \frac{2k\pi}{T_0}\right) + S_x\left(\omega - \frac{2k\pi}{T_0}\right)\right] d\omega.$$

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ACCESSION NR: AT4021140

which, as an extremely common result, makes it possible to determine the mean-square error in discrete measurement in any frequency bands and with any forms of interpolation, for which the analytic expression of the corresponding transfer function can be obtained. The possibility of approximate application methods of the mean-square error expression were considered; the most evident approximation (and one which considerably facilitates the calculation of this expression in practical cases) is the substitution of the real spectral density of the signal by a uniform spectrum in a band with an upper limiting frequency of a max.. The possibility of the practical application of this approximation and its effect on the result obtained were investigated on the basis of a concrete interpolation form, for which, using expression (2), the theoretical dependence of the mean-square error on the reading frequency with a signal of uniform spectrum was determined. Stepwise interpolation was considered. Orig. art. has: 6 figures and 27 formulas.

ASSOCIATION: Institut khimicheskogo mashinostroyeniya, Moscow (Institute of Chemical Equipment Design)

SUBMITTED: 00 DATE ACQ: 19Mar64 ENCL: 00

SUB CODE: IE, MD NO REF SOV: 006 OTHER: 000

Card 3/3

L 32919-65 EWT(d)/ EED-2

ACCESSION NR: AP5007256 S/0280/65/000/001/0103/0110

AUTHOR: Bykov, Yu. M. (Moscow)

TITLE: On the statistical accuracy of regenerating elements in the pulsed transmission of random signals

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 1, 1965, 103-110

TOPIC TAGS: regenerated signal error, signal pulse transmission, regenerating element, continuous signal, signal mean square error

ABSTRACT: The problem of the statistical accuracy of regenerating elements in pulsed transmission of random signals is analyzed. The necessary description of properties of regenerating elements is reduced to estimating the statistical error in the regenerated output signal and to establishing its dependence on the frequency of readings. Expressions for the mean-square errors in the regenerated signal are obtained which make it possible to determine the accuracy of the pulsed transmission of a signal in terms of the frequency of readings for open and closed systems within any range of frequencies and using any method of approximation for which the frequency characteristics can be written. On the basis of these expressions, statistical errors were calculated for the most widely known approximation

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L 32919-65

ACCESSION NR: AP5007256 (0)

methods. Calculation results for approximations corresponding to fixed elements of the first and zero orders and to an element with a triangular characteristic are presented in graphs. It is concluded from the derived expressions that an increase in the order of the regenerating element does not result in an increase in the accuracy of the transmission of a signal. Orig. art. has: 2 figures and 22 formulas. [LK]

ASSOCIATION: none

SUBMITTED: 01Apr64 ENCL: 00 SUB CODE: MM, EC

NO REF SOV: 014 OTHER: 007 ATD PRESS: 3206

Card 2/2

ACC NR: AT6029229 SOURCE CODE: UR/0000/66/000/000/0105/0118

AUTHOR: Bykov, Yu. M.; Yenikeyev, Sh. G.; Ruzhnikov, Ye. M.

ORG: none

TITLE: Statistical accuracy of information transformation in a hybrid system

SOURCE: Vsesoyuznaya konferentsiya-seminar po teorii i metodam matematicheskogo modelirovaniya. 4th, Kiev, 1964. Vychislitel'naya tekhnika vy upravlenii (Computer technology in control engineering); trudy konferentsii. Moscow, Izd-vo Nauka, 1966, 105-118

TOPIC TAGS: statistic analysis, error statistics, mean square error, analog digital computer, Runge Kutta integration method

ABSTRACT: The author applies statistical techniques for computing the mean square error in the digital parts of hybrid systems. The first part of this work deals with derivation of normalized mean square error formulas which allow the calculation of the statistical accuracy of digital signal transmission. Starting with the correlation function of a random signal at the output of a digital system

$$R[m, \varepsilon] = \frac{1}{2\pi} \int_{-\pi}^{\pi} |K^*(j\bar{\omega}, \varepsilon)|^2 S^*_{xx}(\bar{\omega}) e^{l\bar{\omega}m} d\bar{\omega},$$

an expression is obtained which separates the individual components of signal distor-

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tion, the distortion of the input signal spectrum due to nonideal amplitude-frequency characteristics of the system, and the presence of additional signal components, absent in an ideal output signal

$$R[0] = \frac{1}{2\pi}\int_{-\pi}^{\pi} |K(j\bar{\omega})|^2 S_{xx}(\bar{\omega})\,d\bar{\omega} + \\ + \frac{1}{2\pi}\sum_{\pm r=1}^{\infty}\int_{-\pi}^{\pi} |K[j(\bar{\omega}+r\bar{\omega}_0)]|^2 S_{xx}(\bar{\omega}+r\bar{\omega}_0)\,d\bar{\omega}.$$

The mean square error can then be written, accounting for the transmission delay,

$$\varepsilon_1^2 = \frac{1}{2\pi}\int_{-\pi}^{\pi} |1-K(j\bar{\omega})|^2 S_{xx}(\bar{\omega})\,d\bar{\omega} + \\ + \frac{1}{2\pi}\sum_{\pm r=1}^{\infty}\int_{-\pi}^{\pi} |K[j(\bar{\omega}+r\bar{\omega}_0)]|^2 S_{xx}(\bar{\omega}+r\bar{\omega}_0)\,d\bar{\omega}.$$

eliminating the phase information of the delay

$$\varepsilon_2^2 = \frac{1}{2\pi}\int_{-\pi}^{\pi} \{1-|K(j\bar{\omega})|^2\} S_{xx}(\bar{\omega})\,d\bar{\omega} + \\ + \frac{1}{2\pi}\sum_{\pm r=1}^{\infty}\int_{-\pi}^{\pi} |K[j(\bar{\omega}+r\bar{\omega}_0)]|^2 S_{xx}(\bar{\omega}+r\bar{\omega}_0)\,d\bar{\omega}.$$

These expressions can be normalized with respect to the full power ideal output.

$$\eta_1^0(\alpha) = \frac{\int_{-\alpha\pi}^{\alpha\pi} |1 - K(j\bar{\omega})|^2 S_s(\bar{\omega})\, d\bar{\omega} + \sum_{r=-1,1}^{\infty} \int_{-\alpha\pi}^{\alpha\pi} |K[j(\bar{\omega} + r\bar{\omega}_0)]|^2 S_s(\bar{\omega} + r\bar{\omega}_0)\, d\bar{\omega}}{\int_{-\alpha\pi}^{\alpha\pi} S_s(\bar{\omega})\, d\bar{\omega}};$$

$$\eta_2^0(\alpha) = \frac{\int_{-\alpha\pi}^{\alpha\pi} (1 - |K(j\bar{\omega})|^2) S_s(\bar{\omega})\, d\bar{\omega} + \sum_{r=-1,1}^{\infty} \int_{-\alpha\pi}^{\alpha\pi} |K[j(\bar{\omega} + r\bar{\omega}_0)]|^2 S_s(\bar{\omega} + r\bar{\omega}_0)\, d\bar{\omega}}{\int_{-\alpha\pi}^{\alpha\pi} S_s(\bar{\omega})\, d\bar{\omega}};$$

where S_c is the equivalent spectral density. It follows from these expressions that an increase in the order of the restoring element does not lead to a significant improvement in transmission accuracy. Since the technical realization of higher order elements is difficult, in all but a few special cases, the use of zero order elements is advisable. In the second part of the paper, relations are obtained which make the statistical appraisal of the dynamic accuracy of the digital portion of the hybrid system possible with respect to the bandwidth of the input signal and the clock rate of the computer for different algorithms describing the linear operators. The comparative numerical evaluation of these relations permits the establishment of certain

L 09281-67

ACC NR: AT6029229

basic behavior tendencies of the mean square error with respect to the organization and complexity of the applied numerical method. It was determined that the greatest statistical accuracy is attained by the simplest numerical methods. During the operation of the computer in a closed loop system, the delay introduced by the digital portion of the system must be considered. The mean square error values caused by delay are substantially higher than those due to amplitude distortions alone. In a hybrid system for the realization of a dynamic operator, the function of the digital portion frequently is to perform numerical integration of a differential equation system. Comparison shows that the iterative methods (Runge Kutta) have higher statistical errors by an order of magnitude than methods of extrapolation. It should be noted, however, that the realization of the logic required for the extrapolation methods is more difficult than for iterative techniques. The author presents numerous plots of mean square errors for various algorithms. Orig. art. has: 11 figures.

SUB CODE: 12,09/ SUBM DATE: 12Feb68/ ORIG REF: 011/ OTH REF: 003

BYKOV, Yu. S.

On 22 March 1946, at the Power Engineering Institute imeni Molotov, defended his dissertation on "Calculating Aviation Communication Channels without Internal Interference". Official opponents - Doctor of Technical Sciences Professor I. G. Dreyzen, and Doctor of Technical Sciences Professor S. N. Rzhevkin.

So: Elektrichestvo, No 4, April 1947, pp 90-94 (U-5577, 18 February 1954)

A method was presented for calculating radiotelephonic communication channels without internal interference and in the presence of strong acoustical noise, directed toward the choice of frequency characteristics of the channel and the level of sound transmission within the channel. The best rational method was determined for studying and evaluating aircraft acoustical noise, making possible the rapid evaluation of the quality of noise suppression in any given aircraft. A method was examined for calculating the optimal parameters of a channel taking into consideration aural overloading. A detailed calculation was made of several instances of importance for practical use.

So: IBID

BYKOV, Yu. S.

"Soviet Works on the Theory of the Clearness of Speech,"

Iz. Ak. Nauk SSSR, Ser. Fiz., 13, No. 6, 1949.

BYKOV, V.S.

Some peculiarities of hearing. Tr.Comm.for Acoustics,Akad.nauk SSSR, 1950,v.3:

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Certain characteristics of hearing. Trudy Kom. po akust. no 5: 3-9 '50. (MLRA 7:7)
(Hearing) (Audiometer)

1. BYKOV, Yu. S.

2. USSR (600)

4. Russian Language

7. Relationship in the comprehensibility of sounds, syllables, words, and meaning in Russian speech. Trudy Kom. po akust. No. 6, 1951.

9. **Monthly List of Russian Accessions**, Library of Congress, May 1953. Unclassified.

BYKOV, YU. S.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 282 - I

BOOK

Call No.: AF606910

Author: BYKOV, YU. S.
Full Title: NOISES IN CONTEMPORARY AIRCRAFT, AND METHODS OF REDUCTION
Transliterated Title: Shumy sovremennykh samoletov i metody ikh umen'sheniya

Publishing Data
Originating Agency: None
Publishing House: State Publishing House of the Defense Industry (Oborongiz)
Date: 1953 No. pp.: 66 No. of copies: Not given
Editorial Staff: None
Editor: None Tech. Ed.: None
Editor-in-Chief: None Appraisers: None

Text Data
Coverage: This book was written as a supplement to the work published by "Oborongiz" in 1950 as Zvukoizolyatsiya samoletov by Pavlovskiy, B.V., and Liberkheyn, N. M. It is a summary of the author's experiences in aircraft soundproofing and the result of many recent articles published in various periodicals. The booklet contains 31 graphs mainly diagrams, and 11 tables. Tables give figures of a rather general nature.

The booklet is interesting because it concerns recent Russian experiment in the field of soundproofing.

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Shumy sovremennykh samoletov i metody ikh umen'sheniya AID 282 - I

TABLE OF CONTENTS: Preliminary remarks, p. 5; Basic definitions and denotations, p. 8; Aircraft noise and its characteristics, p. 14; Aircraft noise composition and its principal sources, p. 14; Calculation of the noise levels, p. 21; Noise levels from various sources, p. 25; Admissible noise levels on aircraft, p. 26; Basic characteristics of hearing, p. 26; Noise influence on human organism, p. 32; Critical and admissible noise levels on various aircraft, p. 35; Methods of reducing noise, p. 39; Reducing noise at its sources, p. 41; Soundproofing and sound-absorption, p. 43; Noise measurement on aircraft, p. 57; Measuring methods, p. 57; A small noise meter and analyzer, p. 59.

Purpose: A textbook for wide circle of engineering, technical, and scientific workers in the field of aircraft construction and aircraft operation, and for students of institutions of higher learning.

Facilities: None

No. of Russian and Slavic References: 2 before 1938, and 7 after that date.

Available: AID, Library of Congress.

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PHASE I BOOK EXPLOITATION SOV/2772

Bykov, Yu.S.

Teoriya razborchivosti rechi i povysheniye effektivnosti radiotelefonnoy svyazi (Theory of Speech Intelligibility and Increasing the Efficiency of a Radiotelephone Circuit) Moscow, Gosenergoizdat, 1959. 350 p. 3,800 copies printed.

Ed.: N.V. Ryabova; Tech. Ed.: G.Ye. Larionov.

PURPOSE: This book is intended for communications specialists and senior students of vuzes specializing in communication.

COVERAGE: The author discusses fundamentals of the theory of speech intelligibility and explains its application for increasing the efficiency of speech transmission by radiotelephone communication lines. He describes methods of increasing line stability against interferences by proper selection of optimum frequency characteristics and utilizing peak clipping in communication lines. He also presents methods of selecting optimum frequency characteristics depending on the nature of acoustic noise and interferences acting upon the line and compares various radio

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lines according to the degree of speech intelligibility for given value of signal-to-noise ratio at the input of a receiver. He also discusses methods and equipment for experimental determination of speech intelligibility and stability against interferences in radiotelephone communication lines. The material is based largely on research by the author conducted before 1952. The author thanks N.V. Ryabova, Candidate of Technical Sciences, and engineers V.A. Osiptseva, V.F. Sokolova, Ye. M. Ryzhova and V.I. Robas for their participation in developing noise generators and measuring stability against interferences. He also thanks V.Ya.Khevrolin, Candidate of Technical Sciences, and N.V. Ryabova, Candidate of Technical Sciences, for reviewing the manuscript. There are 184 references: 93 Soviet (including 3 translations), 75 English, 11 German, 4 French and 1 Hungarian.

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MURACH, Nikolay Nikiforovich[deceased]; SEVRYUKOV, Nikolay Nikolayevich; POL'KIN, Stepan Ivanovich; BYKOV, Yuriy Aleksandrovich; SLONIMSKIY, B.I., red.; LUTSKAYA, G.A., red.izd-va; KARASEV, A.I., tekhn. red.

[Metallurgy of lead] Metallurgiia olova. Moskva, Metallurgizdat, 1964. 351 p. (MIRA 17:3)

KURZON, A.G.; STAROSTENKO, A.Kh.; NEZHLUKTO, V.Ya.; PASENKO, I.A.; BYKOV, Yu.V.; VOL'PER, Ye.I.; GITEL'MAN, A.I.; GOL'DBERG, F.I.; IL'IN, K.M.; SAVITSKIY, T.A.

Principal results of testing the Soviet gas turbine plant (GTU-20) for seagoing vessels. **Sudostroenie** no.7:22-36 Jl '65.
(MIRA 18:8)

KIZELOV, F.F.; BYKOV, Z.N., prof., red.

[Color and functional painting in industry] TSvet i funktsional'naia okraska v promyshlennosti. Moskva, Mosk. vysshee khudozhestvenno-promyshl. uchilishche, 1964. 17 p. (MIRA 18:9)

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Designing artistic architectural details from metal. Moskva, Gos. izd-vo arkhitektury i gradostroitel'stva, 1950. 237 p. (51-29767)

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1. BYKOV, Z. N.

2. USSR (600)

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7. Shapes and proportions of furniture. Der. i lesokhim.prom. 1 no. 3 - 1952

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ANDREYEVSKIY, V.G., kandidat tekhnicheskikh nauk; BYKOV, Z.N.

[Door and window apparatus] Pribory dlia okon i dverei; obraztsy dlia massovogo zhilishnogo i grazhdanskogo stroitel'stva. Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1953. 8 p. (MLRA 7:1)

1. Rukovoditel' Otdela Khudozhestvennoy promyshlennosti i inter'yera, chlen-korrespondent Akademii arkhitektury SSSR (for Bykov). 2. Akademiya arkhitektury SSSR, Moscow. Nauchno-issledovatel'skiy institut arkhitektury zhilishcha.

(Doors) (Windows)

BYKOVA, A.

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Inst. Zoology, Moscow State Univ. im M. V. Lomonosov

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AUTHORS: Kapustina, T. P., Bykova, A. A. SOV/72-59-7-4/19

TITLE: The Grinding of Ceramic Materials by Means of Bound Grinding Materials (Shlifovka keramicheskikh materialov svyazannym abrazivom)

PERIODICAL: Steklo i keramika, 1959, Nr 7, pp 12 - 15 (USSR)

ABSTRACT: In an article published formerly T. P. Kapustina investigated grinding problems of some ceramic materials by means of unbound grinding material (Footnote 1). In this paper the authors investigate the grinding of flat ceramic products by means of bound grinding materials both on a spur-gear grinding machine of the type 3756MS3 and on a flat grinding machine of the type 371. The products which were processed consisted of ceramic material B17 which was cast or pressed. Grinding wheels of different characteristics and of the dimension 250 x 32 x 75 mm were used. In figure 1 the profile diagram of a ceramic product is represented which was ground by means of the grinding wheel K46O on a spur gear grinding machine. The surface purity was perfect. In consequence of clamping difficulties this method is recommended however only for the grinding of products of great dimensions. The specific

output $J=\frac{U_1}{U_2}$ is significant for the grinding process where U_1 represents the volume of the ground ceramic and U_2 the volume of the worked off grinding wheel. Grinding wheels of different abrasives, different ranges of grain sizes, of different hardness and binding were tried. The test results are given in tables 1 - 3. The best results were obtained by the grinding wheel KZ8CM$_2$K which was used to find the optimum grinding conditions. In table 4 the influence of the grinding wheel feed on the grinding process of the cast and pressed ceramic B17 is demonstrated. In figure 2 the dependence of the feed and the volume of the grinding wheel loss and in figure 3 of the feed and specific grinding wheel output I is represented. In figure 4 the influence of the feed on the grinding power is demonstrated. The experiments carried through confirm the results of Kh. A. Akhundzyanov (LITMO) whereupon the grinding process can be carried through with high feeds and low speeds or with low feeds and high speeds in dependence of the desired surface

purity and manufacturing technology of the products. There are 4 figures, 4 tables, and 1 Soviet reference.

CHENYKAYEVA, Ye.A., metodist; SPIRIDONOVA, A.I., metodist; BYKOVA, A.F.

Farm work in August. Inform. biul. VDNKH no.8:33-34 Ag '63.
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1. Eksponatnyy uchastok ovoshchnykh kul'tur otdela sel'sko-khozyaystvennogo proizvodstva Vystavki dostizheniy narodnogo khozyaystva SSSR (for Chenykayeva, Spiridonova). 2. Glavnyy metodist pavil'ona "Pchelovodstvo" na Vystavke dostizheniy narodnogo khozyaystva SSSR (for Bykova).

KOMISSAROVA, A.N., metodist; BYKOVA, A.F., metodist po pchelovodstvu; GAVRILOVA, V.Ye.; MININA, I.S.; CHERNOVA, I.D., metodist; BLIIMAN, A.O.

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BYKOVA, A.G.; KHAZANOV, Ye.I.

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Physiology of functions of the ocular analyzor during the whole term of normal pregnancy and in the puerperium. Akush. i gin. no.6:14-17 N-D '55 (MLRA 9:6)

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(EYE
fundus, blood supply in pregn. & puerperium)
(PREGNANCY
fundus blood supply of eye fundus)
(PUERPERIUM
same)